REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Claims 1-19 are currently being amended. Claims 22 and 23 are added. Support for the amendments and the added claims can be found throughout the application as originally filed. Claims 20 and 21 are requested to be canceled.

After amending the claims as set forth above, Claims 1-19, 22, and 23 are now pending in this application.

I. Claim Objections

In section 3 of the Office Action, the Examiner objected to Claims 20 and 21 as being substantial duplicates of Claims 15 and 16. Claims 20 and 21 are canceled, rendering this objection moot. Accordingly, Applicant respectfully requests withdrawal of the claim objections.

II. Double Patenting Rejection Based on U.S. Patent Application No. 10/836,094

In section 4 of the Office Action, Claims 17 and 18 were provisionally rejected for nonstatutory obviousness-type double patenting as being unpatentable over Claim 31 of co-pending U.S. Patent Application No. 10/836,094 to Reed *et al.* Applicant respectfully requests that the double patenting rejection be held in abeyance until the pending claims are otherwise in condition for allowance. Once the pending claims are in their final form and are otherwise in condition for allowance, Applicant will submit a terminal disclaimer if appropriate.

III. Claim Rejections – 35 USC § 101

In section 6 of the Office Action, Claims 14, 16, 19, and 21 were rejected under 35 U.S.C. § 101 as allegedly being directed to non-statutory subject matter. Claim 21 has been canceled, rendering this rejection moot for Claim 21. Specifically, the Examiner alleges that "the terms 'computer-readable medium' and 'machine-readable medium' are presumed to include ineligible transitory signals." On page 7 of the Office Action, the Examiner quotes *In re Nuijten*:

"When the broadest reasonable interpretation of a claim covers a signal per se, the claim must be rejected under 35 U.S.C. § non-statutory subject matter." 500 F.3d 1346, 1356-57 (Fed. Cir. 2007).

Applicant respectfully disagrees. *Nuijten* holds that claims solely reciting "physical but transitory forms of signal transmission such as radio broadcasts, electrical signals through a wire, and light pulses through a fiber-optic cable" are not directed to statutory subject matter. *In re Nuijten*, 500 F.3d 1346, 1353-1357 (Fed. Cir. 2007). That is, only "Nuijten's signals, ***standing alone***, are not 'manufactures' under the meaning of that term in § 101." *Nuijten* at 1357 (Emphasis added). Notably, none of the claims at issue in *Nuijten* were CRM claims. To the contrary, the Court in *Nuijten* explicitly points out that the inventor was allowed a claim directed to "'a ***storage medium having stored thereon a signal*** with embedded supplemental data,' where the ***stored signal*** has essentially the encoding properties described above." *Nuijten* at 1351 (Emphasis added). Accordingly, there is no proper basis for the Office Action's blanket allegation that CRM claims lacking the limitation "non-transitory" are *per se* non-statutory subject matter.

The words of a claim must be given their plain meaning unless such meaning is inconsistent with the specification, where plain meaning refers to the ordinary and customary meaning given to the term by those skilled in the art. MPEP §2111.01. The ordinary and customary meaning of a term may be evidenced by a variety of sources, including the words of the claims themselves, the remainder of the ***specification***, the prosecution history, and extrinsic evidence concerning relevant scientific principles, the meaning of technical terms, and the state of the art." *See* MPEP §2111.01 (Emphasis added). In the instant case, explicit examples of "computer readable medium" include "electronic, optical or magnetic storage device." ¶ [0278] of the printed publication.

Further, Applicant notes that the Board of Patent Appeals and Interferences (BPAI) has declined, absent evidence to the contrary, to interpret broadly the phrase "computer readable medium" to include propagating signals. See, *e.g.*, *Ex Parte Azuma*, Appeal No. 2009-003902,

(B.P.A.I., September 14, 2009); *Ex parte Gutta*, 93 USPQ2d 1025, 1034 (B.P.A.I., August 10, 2009, *precedential*); *Ex parte Daughtrey*, Appeal No. 2008-000202 (B.P.A.I., July 31, 2009). For example in *Daughtrey,* the BPAI held

> [I]t does not appear that "computer readable medium" had any commonly-recognized understanding in the art at the time of Appellant's invention. As such, we decline to adopt a definition of the phrase "computer readable medium" that broadly includes signals, when the Appellant has clearly stated on the record that he did not intend the phrase to include signals.

Applicant respectfully submits that, in view of the foregoing, a person skilled in the art would not have taken the ordinary and customary meaning of the phrase "computer-readable medium" to include embodiments where the medium is solely a propagating transitory signal of the type found to be non-statutory subject matter in *Nuijten*. Accordingly, there is no proper basis for the rejection under 35 U.S.C. §101.

Solely in the interest of advancing prosecution, Applicant has included "non-transitory" language in Claims 14, 16, and 19. Applicant submits that Claims 14, 16, and 19 without the "non-transitory" language cover statutory subject matter under 35 U.S.C. § 101 and are worded according to USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 23 February 2010). Inclusion of "non-transitory" in Claims 14, 16, and 19 is done, however, under protest.

Applicant respectfully submits that the requirement to use "non-transitory" is without authority. Applicant's use of "non-transitory" is to be understood only to remove propagating transitory signals *per se* from the claim scope and does not relinquish rights to all standard computer readable media that are not just propagating transitory signals *per se*. In other words, the meaning of "non-transitory computer-readable medium" should be construed to exclude only those types of transitory computer-readable media which were found in *Nuijten* to fall outside the scope of patentable subject matter under 35 U.S.C. §101.

For at least the above reasons, Applicant respectfully requests the withdrawal of the rejection from Claims 14, 16, and 19.

IV. Claim Rejections – 35 USC § 103

In section 8 of the Office Action, Claims 1, 2, 7, 8, and 14-21 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over U.S. Patent No. 6,661,599 to Natarajan (hereinafter "Natarajan") in view of U.S. Patent No. 6,014,453 to Sonoda (hereinafter "Sonoda"). Claims 20 and 21 have been canceled, rendering this rejection moot for these claims. Applicant respectfully submits that Natarajan and Sonoda, alone or in combination, fail to teach, suggest, or disclose at least one element of Claims 1, 2, 7, 8, and 14-19.

A. The combination of Natarajan and Sonoda fails to disclose the claimed "the print structures change in response to a copy operation."

Claim 1 recites in part, "the print structures change in response to a copy operation." Claims 2, 7, 8, and 14-19, although of different scope, contain similar elements. On pages 9-10, the Examiner asserts that Col. 10, ll. 38-57, and Col. 15, ll. 15-42 of Sonoda teaches this element. Applicant respectfully disagrees and submits that the Examiner is misconstruing the teachings of Sonoda.

Sonoda is generally directed toward generating "counterfeit probability data indicating that a non-reproducible document is being processed even when the pattern which identifies such documents has been defaced." Abstract. Thus, Sonoda "concerns a counterfeit detecting method and device to generate a counterfeit probability...." Col. 1, ll. 8-9. The counterfeit probability data is "generated by comparing a characteristic pattern found in the image ... to a set of reference patterns." Col. 1, ll. 27-31.

During a "first stage of image processing device 300, attempts to match a pattern consisting of a mark or shape of a given size against **a gradated image generated by condensing the image data which have been input**." Col. 8, ll. 42-46. (Emphasis added). A

pattern detection device can then "check[] every area for the presence of patterns which are likely candidates for a match with the specified pattern...." Col. 8, ll. 46-47. Checking based on the gradated image data allows "matches [to be] judged swiftly and accurately." Col. 9, ll. 21-22.

The pattern detection device includes an "averaging unit." Col. 9, l. 35. The "image data are sent to averaging unit 10, where a specific number of neighboring pixels in the relevant data are combined to form larger units. The density of the pixels in each unit is averaged to create a gradated image, as it were, of rather larger pixels." Col. 9, ll. 34-39. Thus, the gradated image is created from the image data, and consists of larger pixels whose values are a combination of a group of neighboring pixels from the original image.

Applicant submits that Col. 10, ll. 38-56, which was cited by the Examiner, refers to this gradated image. Col. 10, ll. 38-56 provides:

> **The average density of each sixteen pixels is used to construct an image consisting of new, larger pixel units.** The data concerning this new image are sent to binary processor 16, where at a certain threshold density they are converted to binary values. The resulting binary image is stored temporarily in multiple-line memory 17. This generated image is more blurry than the original image. **Details of the original patterns in the image have been lost, and only rough shapes can be discerned.** By setting an appropriate threshold for the conversion to binary, we can produce an image in which the interior of a given pattern, such as the corner or one of the markings on a bank note (in the case of a bank note), will appear totally black while the background is totally white. Even if a misregister or other printing error in the original image as read out and input results in a slight discrepancy between the specified pattern which is stored and the pattern which is being checked, the discrepancy will vanish when **the image is gradated**. This method allows the image to be detected simply and quickly.

(Emphasis added). Applicant submits that the above-cited portion of Sonoda relates to the gradated image. As described in Sonoda, the gradated image is generated by averaging neighboring pixel values to create larger pixels. Such larger pixels result in the loss of details in the original image. Applicant submits that averaging neighboring pixel values to generate a

gradated image cannot be considered equivalent to the claimed "the print structures **change in response to a copy operation.**" (Emphasis added).

The other portion of Sonoda cited by the Examiner, Col. 15, ll. 15-42, also fails to disclose the claimed "the print structures change in response to a copy operation." Col. 15, ll. 15-42, of Sonoda provides:

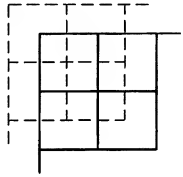
> In this example, the aforesaid fuzzy knowledge is assembled by collecting various items of knowledge concerning a single characteristic pattern, and the inference is processed using these various facts. **It sometimes happens that a printing error or other accident will cause the image data which are read to be slightly different from the reference pattern for a non-reproducible document, and to be shifted slightly from where they ought to be**. In cases in which the pattern is a mark, the angle of rotation is often unclear. A slight shift in the location of a pattern can be accommodated by assembling and storing knowledge representing various angles at which the pattern might be rotated.
>
> A specific example involving a corner is shown in FIG. 13(A). Map data (equivalent to the image data output by binary device 2 in pattern extraction device 2 when the pattern has been read by the copy machine) obtained by reading the image at a given resolution are generated for an image which corresponds to the center of the pattern to be detected (shown by solid lines). In the same way, map data are generated for the same image which has been shifted slightly left, right, up and to the left, up and to the right, down and to the left and down and to the right. (The example shows the image shifted up and to the left in broken lines.) Fuzzy knowledge is generated for each image. In this way a single pattern (in this case, a corner) can be used to generate a number of sets of fuzzy knowledge to cover a variety of ways in which the image might be shifted.

(Emphasis added).

Thus, this section of Sonoda is directed to a pattern in the image data that is accidentally shifted from the reference pattern. This is clearly shown below in Figure 13A. Applicant

submits that a pattern in an image that is shifted with respect to a reference pattern cannot be considered equivalent to the claimed "the print structures change in response to a copy operation."

FIG. 13A



Additionally, Applicant notes that Sonoda is similar to previously-cited art such as U.S. Patent No. 6,091,844 to Fuji *et al.* and U.S. Patent No. 5,781,653 to Okubo, both of which have been previously overcome. Similar to the previously cited art, Sonoda provides no teaching that any "print structures change in response to a copy operation."

A rejection under 35 U.S.C. § 103(a) cannot be properly maintained where the references used in the rejection fail to disclose all of the recited claim elements. For at least these reasons, Applicant respectfully requests the withdrawal of the rejection for Claims 1, 2, 7, 8, and 14-19.

V. Remaining Claim Rejections – 35 USC § 103

In section 9 of the Office Action, Claim 3 was rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Natarajan in view of Sonoda and further in view of U.S. Patent No. 5,824,447 to Tavernier *et al.* (hereinafter "Tavernier"). Applicant respectfully submits that

Natarajan and Sonoda and Tavernier, alone or in combination, fail to teach, suggest, or disclose at least one element of Claim 3.

In section 10 of the Office Action, Claim 4 was rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Natarajan in view of Sonoda and further in view of U.S. Patent No. 6,434,322 to Kimura *et al.* (hereinafter "Kimura"). Applicant respectfully submits that Natarajan and Sonoda and Kimura, alone or in combination, fail to teach, suggest, or disclose at least one element of Claim 4.

In section 11 of the Office Action, Claim 5 was rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Natarajan in view of Sonoda and further in view of U.S. Patent No. 6,198,545 to Ostromoukhov *et al.* (hereinafter "Ostromoukhov"). Applicant respectfully submits that Natarajan and Sonoda and Ostromoukhov, alone or in combination, fail to teach, suggest, or disclose at least one element of Claim 5.

In section 12 of the Office Action, Claim 6 was rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Natarajan in view of Sonoda and further in view of U.S. Patent No. 5,687,297 to Coonan *et al.* (hereinafter "Coonan"). Applicant respectfully submits that Natarajan and Sonoda and Coonan, alone or in combination, fail to teach, suggest, or disclose at least one element of Claim 6.

In section 13 of the Office Action, Claims 9 and 10 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Natarajan in view of Sonoda and further in view of U.S. Patent No. 5,074,596 to Castagnoli *et al.* (hereinafter "Castagnoli"). Applicant respectfully submits that Natarajan and Sonoda and Castagnoli, alone or in combination, fail to teach, suggest, or disclose at least one element of Claims 9 and 10.

In section 14 of the Office Action, Claims 11, 12, and 13 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Natarajan in view of Sonoda and further in view of U.S. Patent No. 7,027,189 to Umeda (hereinafter "Umeda"). Applicant respectfully submits that

Natarajan and Sonoda and Umeda, alone or in combination, fail to teach, suggest, or disclose at least one element of Claims 11, 12, and 13.

As discussed above, Applicant respectfully submits that the combination of Natarajan and Sonoda fails to teach, suggest, or describe at least one elements recited in each of the independent claims. Kimura, Ostromoukhov, Coonan, Castagnoli, and Umeda, alone or in combination, fail to cure the deficiency of Natarajan and Sonoda. More specifically, the combination of Natarajan, Sonoda, Kimura, Ostromoukhov, Coonan, Castagnoli, and Umeda fails to teach, suggest, or disclose at least the claimed "wherein the print structures change in response to a copy operation." Accordingly, Applicant respectfully requests withdrawal of the rejections from Claims 3-6 and 9-13.

* * * * *

Applicant believes that the claims are patentable over the cited art. Favorable reconsideration of the application as amended is respectfully requested. The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by the credit card payment instructions in EFS-Web being incorrect or absent, resulting in a rejected or incorrect credit card transaction, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date December 7, 2010

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